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Sebastien Bardon

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EXAMINER

SHUMATE, ANTHONY R

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

06/05/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/583,938	<b>Applicant(s)</b> BARDON ET AL.	
	<b>Examiner</b> ANTHONY SHUMATE	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-27 and 29-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-27 and 29-37 is/are rejected.
- 7) ☒ Claim(s) 37 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 3/13/09 (Figs 1-2) & 6/22/06 (Figs 3-7) is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. The Amendment filed 13 March 2009 has been entered and fully considered.
2. Claims 18-27 and 29-37 are pending, of which claims 18-27 and 34 were amended and claims 35-37 are new. The amendments of claims 18-27 and 34, and new claims 35-37 are supported by the originally filed disclosure.
3. The previous Oath/Declaration objection is withdrawn in light of Applicant's arguments to Oath/Declaration objection.
4. The previous drawing objection in relation to the figures 1 and 2 as prior art is withdrawn in light of Applicant's amendments to the drawing.
5. The previous drawing objection in relation to the numerous reference characters is withdrawn in light of Applicant's arguments to the drawings.
6. The previous specification objection is withdrawn in light of Applicant's arguments to the specification objection.

### ***Claim Objections***

7. Claim 37 is objected to because of the following informalities: Claim 37 has the grammatical error of a lone quotation mark without a complementary quotation mark. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

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8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 18-27 and 29-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over OHNO et al. (WO 01/23069) in view of KOTANI et al. (US 5,629,067).

For convenience the OHNO et al. (US 6,669,751 B1) will be used for reference as a translation of OHNO et al. (WO 01/23069).

For instant **claim 18**, OHNO et al. teaches at the abstract and the figures and column 4 line 1 - column 6 line 67 and the claims an assembly of blocks, at least one of the honeycomb filter blocks has a plurality of flow channels for the internal combustion engine exhaust gases, each of the channels being bounded by a side wall, a plug and an opening terminating outwardly.

Also for instant **claim 18**, KOTANI et al. teaches at the abstract and figure 1 a similar honeycomb filter device.

Also for instant **claim 18**, KOTANI et al. teaches a technique at the abstract, figure 1, figure 4 and figure 5 wherein a first portion of the side wall of at least one of the grooves (channels), comprises a coating (reinforcement) compared to the rest of the side wall forming a second portion of the side wall.

Additionally for instant **claim 18**, KOTANI et al. teaches a technique at the abstract, figure 1, figure 4, figure 5 and column 10 lines 1-20 wherein the

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thickness of the honeycomb wall (second portion) is 150  $\mu\text{m}$  (0.150mm), and the thickness of the coating (first portion) is in a range of about 0.1-1 mm.

As well for instant **claim 18**, it is the examiner's position that the ratio of the thickness of the coating (first portion) of a range of about 0.1-1 mm to the thickness of the honeycomb wall (second portion) of 150  $\mu\text{m}$  (0.150mm), in a transverse plane of section, being between about 1.7-7.7 which overlaps the claimed range of between 1.1 and 3, thereby making a prima facie case of obviousness. (MPEP 2144.05 PART I)

Moreover for instant **claim 18**, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the technique taught by KOTANI et al. to the similar honeycomb filter device taught by OHNO et al. for the benefit of improving the strength of the honeycomb filter which was taught by KOTANI et al. at column 5 lines 10-67 and column 6 lines 1-46.

For instant **claim 19**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5 column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 a group of the adjacent filled grooves (reinforced channels) arranged so that the first portions of the filled grooves (reinforced channels) form a continuous reinforcing partition.

For instant **claim 20**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5 column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 wherein the filled grooves (reinforced channels) of the group extend to the periphery of the block.

For instant **claim 21**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5 column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 wherein the coating (first portion) comprises an external face in contact with the exterior of the block.

For instant **claim 22**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5 column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 wherein the filled grooves (reinforced channels) of the group are arranged so that the coating (reinforcing partition) overlaps a longitudinal edge of the filter block.

For instant **claim 23**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5 column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 wherein the group of filled grooves (reinforced channels) comprises all the peripheral channels of the block so that the coating (reinforcing partition) surrounds the block, preferably so that the coating (reinforcing partition) is at the external surface of the block.

For instant **claim 24**, KOTANI et al. teaches a technique at the abstract, figure 1, figure 4, figure 5 and column 10 lines 1-20 wherein the thickness of the honeycomb wall (second portion) is 150  $\mu\text{m}$  (0.150mm), and the thickness of the coating (first portion) is in a range of about 0.1-1 mm. Also, it is the examiner's position that the ratio of the thickness of the coating (first portion) of a range of about 0.1-1 mm to the thickness of the honeycomb wall (second portion) of 150  $\mu\text{m}$  (0.150mm), in a transverse plane of section, being between about 1.7-7.7 which overlaps the claimed range of between 1.1 and 3, thereby making a prima facie case of obviousness. (MPEP 2144.05 PART I)

Also for instant **claim 24**, KOTANI et al. does not specifically teach wherein the ratio is constant irrespective of the transverse plane of section considered. It would have been obvious to one having ordinary skill in the art at the time the invention was made to wherein the ratio is constant irrespective of the transverse plane of section considered, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

For instant **claim 25**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5 column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 wherein the coating (reinforcement) is in a longitudinal plane of sections of

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the block. Also, KOTANI et al. does not specifically teach wherein the coating (reinforcement) is substantially constant in any longitudinal plane of section of the block. But, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wherein the coating (reinforcement) is substantially constant in any longitudinal plane of section of the block, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

For instant **claim 26**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5 column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 wherein the coating (reinforcement) for the filled grooves (reinforced channels) of the group in transverse plane of sections and/or in longitudinal planes. Also, KOTANI et al. does not specifically teach wherein the coating (reinforcement) is substantially constant for all the filled grooves (reinforced channels) of the group in any transverse plane of section and/or in any longitudinal plane. But, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wherein the coating (reinforcement) is substantially constant for all the filled grooves (reinforced channels) of the group in any transverse plane of section and/or in any longitudinal plane, since it has been held that where the general conditions of a claim are disclosed in the



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prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

For instant **claim 27**, KOTANI et al. teaches a technique at the abstract, figure 1, figure 4, figure 5 and column 10 lines 1-20 wherein the thickness of the honeycomb wall (second portion) is 150  $\mu\text{m}$  (0.150mm), and the thickness of the coating (first portion) is in a range of about 0.1-1 mm.

Also for instant **claim 27**, it is the examiner's position that the ratio of the thickness of the coating (first portion) of a range of about 0.1-1 mm to the thickness of the honeycomb wall (second portion) of 150  $\mu\text{m}$  (0.150mm), in a transverse plane of section, being between about 1.7-7.7

Additionally for instant **claim 27**, KOTANI et al. does not specifically teach wherein the ratio R is between 1.9 and 2.1 But, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wherein the ratio R is between 1.9 and 2.1, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. (MPEP 2144.05 PART II-A)

Furthermore, for instant **claim 27**, it is the examiner's position that the following claim language is optional and does not limit the scope of the claim based upon MPEP 2106 and the claim language is preferably is substantially equal to 2.

For instant **claim 29**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 5 lines 10-67, column 6 lines 1-46, and column 10 lines 1-20 an extrusion die conformed to form, by extrusion of a clay (ceramic material), a structure provided with grooves (channels) suitable for the fabrication of a filter block, the structure comprising the reinforcement.

For instant **claim 30**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 5 lines 10-67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-60 extrusion of a clay (ceramic material) to form a porous honeycomb structure.

Also for instant **claim 30**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 5 lines 1-67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-65 application of a reinforcement of a material, identical or different from the cordierite ceramic material, to at least part of the external surface of the porous structure.

Additional for instant **claim 30**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 4 lines 50-65, column 5 lines 10-67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-60 drying and firing (sintering) of the porous structure to obtain a filter block.

For instant **claim 31**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 4 lines 50-65, column 5 lines 10-

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67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-60 drying the porous structure. Also, KOTANI et al. does not specifically teach a step for drying said porous structure between steps a) and b). But, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a step for drying said porous structure between steps a) and b), since it has been held that a mere change in the sequence of adding ingredients involves only routine skill in the art. (MPEP 2144.04 PART IV-C)

For instant **claim 32**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 4 lines 50-65, column 5 lines 10-67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-60 a step of grinding (machining) the porous structure. Also, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 4 lines 50-65, column 5 lines 10-67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-60 drying the porous structure. Additionally, KOTANI et al. does not specifically teach a step for machining the dried porous structure obtained before step b). But, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a step for machining the dried porous structure obtained before step b), since it has been held that a mere change in the sequence of adding ingredients involves only routine skill in the art, and it has been held that a mere change in the proportions involves only routine skill in the art. (MPEP 2144.04 PART IV-A AND IV-C)

For instant **claim 33**, KOTANI et al. teaches at the abstract, figure 1, figure 4, figure 5, column 2 lines 5-50, column 4 lines 50-65, column 5 lines 10-67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-60 the coating (reinforcement) material is applied at least to part of the external surface having been grinded (machined).

For instant **claim 34**, OHNO et al. teaches at the abstract and the figures and column 4 line 1 - column 6 line 67 and the claims assembling a plurality of filter blocks.

For instant **claim 35**, OHNO et al. teaches at the abstract and the figures and column 4 line 1 - column 6 line 67 and column 13 lines 1-67 and the claims wherein the block presents the shape of a rectangular parallelepiped.

For instant **claim 36**, KOTANI et al. teaches at the abstract, figures, column 2 lines 5-50, column 4 lines 50-65, column 5 lines 10-67, column 6 lines 1-46, column 10 lines 1-20 and column 15 lines 35-60 wherein the reinforcement is along the whole external surface.

For instant **claim 37**, OHNO et al. teaches at the title and the abstract and the figures and column 4 line 1 - column 6 line 67 and column 8 lines 1-67 an

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assembly of blocks and an extrusion mold (die) shaped so as to form, by extrusion of a ceramic material, a structure suitable for the fabrication of one-piece filter block particularly for filtering particulates present in exhaust gases of an internal combustion engine.

Also for instant **claim 37**, KOTANI et al. teaches at the abstract and figure 1 a similar honeycomb filter device.

Also for instant **claim 37**, KOTANI et al. teaches a technique at the abstract, figures, column 1 lines 1-67 and column 2 lines 5-50 and column 3 lines 1-67 and column 5 lines 10-67 and column 6 lines 1-46 and column 8 lines 25-55 and column 10 lines 1-20 an extrusion die shaped so as to form, by extrusion of a ceramic material, for filtering particulates present in exhaust gases and diesel engines and automobile exhaust gas or emissions.

Additionally for instant **claim 37**, KOTANI et al. teaches a technique at the abstract, figures, column 1 lines 1-67 and column 2 lines 5-50 and column 3 lines 1-67 and column 5 lines 10-67 and column 6 lines 1-46 and column 8 lines 25-55 and column 10 lines 1-20 a block comprising a plurality of flow channels for exhaust gases, each of the grooves (channels) being bounded by a side wall, a plug and an opening terminating outwardly, wherein a first portion of the side wall of at least one of the grooves (channels), called "the reinforced channel", comprises a coating (reinforcement) compared to the rest of the sidewall forming a second portion of the side wall.

Additionally for instant **claim 37**, KOTANI et al. teaches a technique at the abstract, figure 1, figure 4, figure 5 and column 10 lines 1-20 wherein the thickness of the honeycomb wall (second portion) is 150  $\mu\text{m}$  (0.150mm), and the thickness of the coating (first portion) is in a range of about 0.1-1 mm.

As well for instant **claim 37**, it is the examiner's position that the ratio of the thickness of the coating (first portion) of a range of about 0.1-1 mm to the thickness of the honeycomb wall (second portion) of 150  $\mu\text{m}$  (0.150mm), in a transverse plane of section, being between about 1.7-7.7 which overlaps the claimed range of between 1.1 and 3, thereby making a prima facie case of obviousness. (MPEP 2144.05 PART I)

Moreover for instant **claim 37**, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the technique taught by KOTANI et al. to the similar honeycomb filter device taught by OHNO et al. for the benefit of improving the strength of the honeycomb filter which was taught by KOTANI et al. at column 5 lines 10-67 and column 6 lines 1-46.

### ***Response to Arguments***

10. Applicant's arguments filed 13 March 2009 have been fully considered but they are not persuasive.

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11. In response to applicant's argument that KOTANI and HIGUCHI does not disclose an assembly of blocks. The Applicant is invited to review the above action for a reply to this new limitation.

12. In response to applicant's argument that KOTANI and HIGUCHI is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, KOTANI and HIGUCHI are in the field of applicant's endeavor filter bodies.

13. The Applicant argues at page 13 that KOTANI teaches away from reinforcing the outer periphery. The Examiner respectfully disagrees. KOTANI teaches at the abstract and the figures a coating (reinforcement) which is on the outer periphery which is in addition to the honeycomb walls. Additionally, for clarification only, KOTANI teaches at column 3 lines 10-25 that this coating is reinforcement.

### ***Conclusion***

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY SHUMATE whose telephone number is (571)270-5546. The examiner can normally be reached on M-Th 9-4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571)272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A.S./

Examiner Art Unit 1797

/ROBERT J. HILL, JR./

Primary Examiner, Art Unit 1797